have much as I want.

6 x

$2Fe + 3Cl_2 \rightarrow 2FeCl_3$

$\frac{6}{2} = \frac{x}{2}$ $\frac{12}{2} = \frac{2x}{2}$ $x = 6\ mol$

6 mol x

$2Fe + 3Cl_2 \rightarrow 2FeCl$

$\frac{6}{2} = \frac{x}{3}$ $\frac{18}{2} = \frac{2x}{2}$ $x = 9\ mol\ Cl_2$

3.77 mol x

$2Fe + 3Cl_2 \rightarrow 2FeCl$

$$\frac{3.77}{2} = \frac{x}{3}$$

$(3.77)(3) = 2(x)$

$\frac{11.31}{2} = \frac{2(x)}{2}$

$x = 5.655 \text{ mol } Cl_2$

$x = 5.66 \text{ mol } Cl_2$

have enough Fe

6.3 mol

$$4Fe + 3O_2 \rightarrow \overset{x}{2Fe_2O_3}$$

$$\frac{6.3}{3} = \frac{x}{2}$$

$$(6.3)(2) = 3(x)$$

$$\frac{12.6}{3} = \frac{3(x)}{3}$$

$x = 4.2$ mol Fe_2O_3

22.

$$3\,CsC_2H_3O_2 + AlPO_4 \rightarrow Al(C_2H_3O_2)_3 + Cs_3PO_4$$

(x above $CsC_2H_3O_2$; 1.25×10^{-6} above $Al(C_2H_3O_2)_3$)

$$\frac{x}{3} = \frac{1.25\times10^{-6}}{1}$$

$$(3)(1.25\times10^{-6}) = x$$

$.00000375$ mol cesium acetate

3.75×10^{-6} mol cesium acetate

20.

$$\underset{2.3\,mol}{4Fe} + \underset{?\,g}{3O_2} \rightarrow \underset{x}{2Fe_2O_3}$$

① $\frac{2.3}{4} = \frac{x}{3}$

$(2.3)(3) = 4(x)$

$\frac{6.9}{4} = \frac{4(x)}{4}$

$x = 1.725\ mol\ O_2$

$\frac{1.725\,mol \times 32\,g}{1\,mol} =$

$16 \times 2 = 32\,g = 1\,mol$

$55.2\,g\ of\ O_2$

$55\,g\ of\ O_2$

21.

$$CaCO_3 + \overset{x}{\underset{?\,g}{2HCl}} \longrightarrow \overset{850\,mol}{CaCl_2} + H_2O + CO_2$$

Use rxn

$$\frac{x}{2} = \frac{850}{1} \qquad x = (2)(850)$$

$x = 1700$ moles of HCl

HCl

$1 \times 1 = 1$

$35.5 \times 1 = 35.5$

$36.5\,g = 1\,mol$

$$\frac{1700\,mol \times 36.5\,g}{1\,mol} = 62050\,g \text{ of } HCl$$

$6.2050 \times 10^4\,g$ of HCl

$6.2 \times 10^4\,g$ of HCl

23.

$$6NaNO_3 + \overset{3.48\,mol}{CrCl_6} \rightarrow \overset{x}{6NaCl} + \underset{?\,g}{Cr(NO_3)_6}$$

$$\frac{3.48}{1} = \frac{x}{6} \qquad x = 6(3.48)$$

$x = 20.88$ mol NaCl

Na $23 \times 1 = 23$

Cl $35.5 \times 1 = 35.5$

$58.5\,g = 1$

$$\frac{20.88\,mol \times 58.5\,g}{1\,mol} =$$

$1221.48\,g$

1.22×10^3 g of NaCl

24.

$$CH_4 + \overset{x}{2O_2} \longrightarrow \overset{7.8409\ mol}{CO_2} + 2H_2O$$

$?\ g$ $\qquad$ $345 g$

C $12 \times 1 = 12$

O $16 \times 2 = 32$

$44 g = 1 mol$

$$\frac{345 g \times 1 mol}{44 g} = 7.8409 mol$$

$$\frac{7.8409 mol}{1} = \frac{x}{2}$$

$x = 15.6818$ mol of O_2

$O\ 16 \times 2 = 32 g = 1 mol$

$$\frac{15.6818 mol \times 32 g}{1 mol} =$$

$501.8 g$ of O_2

$502 g$ of O_2

75.52% 32.634

(.7552)(32.634) = 24.6451

(.2448)(31.635) = 7.7442

32.3893g

24.48%

32.39g